Mobility Exchange® MX-8

The Trapeze Networks Mobility Exchange® (MX®) family of intelligent WLAN controllers provide the platform for Trapeze Smart Mobile™ wireless networks. Smart Mobile is the only WLAN architecture with intelligent switching, which combines both centralized and distributed data forwarding based on the requirements of the underlying application. Operating in conjunction with Trapeze Mobility Point® (MP®) access points and Mobility System Software® (MSS), MX controllers can offload policy enforcement and data forwarding to the MP access points, resulting in optimized traffic flow, radically reduced latency, and massive scalability. Smart Mobile WLANs can support the most demanding wireless applications indoors and outdoors, including voice over WLAN for thousands of users, and are 802.11n ready without the need for expensive controller upgrades. MX controllers are available in multiple models to meet the entire range of enterprise WLAN needs, from small branch offices to large data centers, at the lowest total cost.

Designed for branch office and distributed wiring closet installations, the MX-8 enables seamless and secure deployment of enterprise-class wireless networks over any existing L2/L3 network without disruption.

The MX-8 WLAN controller features 8 10/100 Fast Ethernet ports for unshielded twisted-pair (UTP) environments, 6 of which provide Power-over-Ethernet (PoE), and supports up to 12 MP access points. The MX-8 can be ordered with an optional redundant power supply.

The MX-8 combines L2 Ethernet switching, stateful LAN-speed per user and per service firewalls, wireless intrusion protection, 802.1Q trunking and per VLAN spanning tree (PVST+), complete wired to wireless quality of service (QoS), and automated RF management. Clusters of MX controllers, called a Mobility Domain™, provide seamless roaming, intrusion protection and RF management over the largest single site wireless LAN deployments. A Network Domain interconnects and distributes Mobility Domains to span wide geographic regions with secure, seamless mobility applications and Smart Mobile services.

Key Features

SCALABILITY AND RELIABILITY	
Number of managed Mobility Point access points	• Up to 12 (6 may be powered by PoE ports)
Mobility Domain™ service for seamless mobility services	• Mobility service across 32 MX controllers and 4,096 MP access points
Network Domain service extends the reach of Mobility Domain across a global network	• Cluster of 1,024 Mobility Domains, extending mobility across 32,768 MX controllers
Reliability	• Redundant Power Module (optional) • EtherChannel™ load-shared, redundant links • Spanning tree and per-VLAN spanning tree (PVST+) • Resilient network attachment via any MX port • N:1 redundant MX capabilities

SECURITY	
Authentication	• Supports complete local AAA authentication, including 802.1x, as primary or backup to a centralized AAA server • Supports multiple AAA server groups and can load share across multiple AAA servers or within a server group • Generates and manages X.509 digital certificates • Assigns and enforces per-user authorization policies that are managed centrally from the AAA back-end • Authorizations include virtual private group membership, personal firewall filters, time-of-day/day-of-week access, encryption type, and location-specific policies • IEEE 802.1x with multiple EAP types (TLS, PEAP/MSCHAP, TTLS) • WebAAA, MAC, Open • WiFi WPA2 Enterprise certified
Encryption Key Management	• Encryption distributed in Mobility Point access points • MX generates master and session keys • Provides key management for each encryption technique
Identity-based Networking	• User credentials define access and network resource privileges • Privileges and services follow users as they roam • Maintains a user's membership in the right virtual private group based on the user's authenticated identity • Dynamically enables Virtual Private Groups to support roaming across router boundaries • Centralized management and control
Endpoint Assurance	• Trusted Computing Group (TCG) - Trusted Network Connect (TNC) compliant
Intrusion Detection and Protection	• ActiveScan rogue and denial-of-service (DoS) attack detection — Scan all bands, associated channels and VLANs, while simultaneously providing wireless connectivity to mobile clients • SentryScan — Scan the air nonstop on both bands and their associated channel while other MPs support wireless LAN clients • Rogue detection, Intrusion Detection System (IDS) and RF countermeasures • Trapeze/AirDefense integrated Intrusion Detection and Prevention - Best in class IDS/IPS - Common Trapeze MP hardware for sensor and service APs - Dynamic threat management- convert MPs to sensors on demand - Threat location and mitigation
MOBILITY SERVICES	
Data Services	• Data-intensive applications • Latency-sensitive applications
Standards-based toll quality voice service	• VoIP protocol support • 802.11 e/WMM compliant • Queuing and priority (802.11e/WMM) • Preserve voice priority across network (802.11i PMK cache, WMM) • Bandwidth control for voice (TSPEC) • Maximize handset battery life (U-APSD) • Neighbor report assisted roaming (802.11k)

Virtual service sets	• Multiple SSID support (64 per MP, 32 per radio) • Any mix of crypto and authentication per SSID • Any VLAN topology per SSID • Unique portal page per SSID • Private or shared authentication
Guest Services	• SmartPass™ enables fast and simple configuration for guest access • 64 web portals for customized user group profiles • GuestTunneling to isolate guest traffic across the corporate network
High speed data services (802.11n)	• 802.11n ready • Direct Data Path Forwarding enables local switching of data traffic in the Mobility Point or forwarding of data to Mobility Point upstream or downstream • Mobility Point configured by MX for Direct Data Path Forwarding
Outdoor services	• Wireless backhaul (P-P, P-MP) and Wireless bridging (P-P, P-MP) • Enterprise Ethernet mesh service with Mesh Portal and Mesh Access Point Services with Direct Data Path support • Integrated control and management with indoor Smart Mobile services
Real time location services	• WiFi based active RFID location technology (client and network based) • Integrated with Location appliance
MANAGEMENT AND CONTROL	
Management access	• Command Line Interface (SSH v2) • WebView web access (https) • SSL, XML (to RingMaster®) • SNMP v1, v2c, v3
RF management	• Automated MP Power/channel auto-tuning • Dynamic Frequency Selection (DFS)
User management and statistics	• Detailed per user session RF accounting statistics management • Tracks the location, roaming history, virtual private group, network addresses, state, activity, errors, usage and other attributes by user name, session, VLAN, user group or other • Categories selected by IT • Provides per user audit trail and chargeback capability through the accounting component of AAA
MP management and control	• Configures and controls MP access points; controls third party APs • Boot, configuration and management model compliant with the IETF CAPWAP architecture. The MX is categorized as an access controller (AC) that supports direct, switched, and routed connections. • Enable Data forwarding in MX or in MP with Smart Mobile technology • Multiple MXs provide resilient control
Direct Data Path Forwarding	• MP configured to switch data traffic locally or forwarded to the MPs downstream or upstream • Optimizes network and MX capacity and performance • Control retained in MX
Client load balancing	• Equalize the number of client sessions amongst groups of radios that have substantially overlapping coverage areas • Restore equality of numbers of sessions when an AP is added to a group or is brought back up after a transient failure • Allow a balanced group of APs to span multiple MX's in a mobility domain
Client steering	• Enable client steering across bands for efficient usage of the available spectrum, and reduce network load on the congested 802.11b/g band

Specifications

HARDWARE SPECIFICATIONS	
Dimensions (W x D x H)	• 17.4 in x 12.1 in x 1.7 in • (44.2 cm x 30.7 cm x 4.3 cm)
Weight	• 8.5 lbs (3.8 kg) with one power supply • 9.5 lbs (4.3 kg) with 2 power supplies
Interfaces	• 8 10/100 Fast Ethernet ports • 2 with integrated Power-over-Ethernet (PoE)
Environmental	• Operating temperature: -10°C to 50°C • Storage temperature: -20°C to 70°C • Humidity: 10% - 90% (non-condensing)
Power	• 93-132 VAC, 180-264 VAC, 50-60 Hz, auto-sensing • 300 watts power supply (x 2 in MX-216R) • Max Amperage draw: 4.0 Arms at 115 Vrms, 2.0 Arms at 230 Vrms
Power over Ethernet	• Voltage output: 48 VDC nominal • Total power budget (all ports): 91.8 W • Power per port: 15.3 W • Cable requirements: PoE on 10/100 Mbps RJ-45 ports using pins 4, 5 (node) and 7, 8 (return) on standard Category 5 UTP
Regulatory Safety	• UL 609501-1, CB IEC 609501-1, EN 60950-1
EMI / EMC	• FCC PART 15 Class A • ICES 003 • VCCI • EN 55022, EN 55024
SUPPORTED STANDARDS	
Security and AAA RFCs	• RFC 2246 Transport Layer Security (TLS) • RFC 2284 EAP • RFC 2315 PKCS #7: Cryptographic Message Syntax Ver 1.5 • RFC 2548 Microsoft RADIUS VSAs • RFC 2716 PPP EAPTLS Authentication Protocol • RFC 2759 Microsoft PPP CHAP Extensions, Version 2 • RFC 2865 RADIUS Authentication • RFC 2866 RADIUS Accounting • RFC 2869 RADIUS Extensions • RFC 2986 PKCS #10: Certification Request Syntax Ver 1.7 • RFC 3580 IEEE 802.1x RADIUS Guidelines
IEEE Standards	• 802.1x: Port Based Network Access Control • 802.3: 100BASE-T • 802.3u: 1000BASE-TX Gigabit Ethernet • 802.3af: Power over Ethernet • 802.11 a/b/g, 802.11d, 802.11e, 802.11h, 802.11i

General	• RFC 1122 Host requirements • RFC 1393 Traceroute • RFC 1519 CIDR • RFC 1591 DNS • RFC 2030 SNTP • RFC 768 UDP • RFC 783 TFTP • RFC 791 IP • RFC 792 ICMP • RFC 793 TCP • RFC 826 ARP • IEEE 802.1D Spanning Tree • IEEE 802.1Q VLAN tagging • IEEE 802.3ad (static config)
Management and Control	• RFC 854 Telnet (server and client) • SSHv2 - Secure Shell V2 • SNMP v1, v2c, v3 • RFC 1213 MIB-II • RFC 1866 HTML • RFC 2068 HTTP • RFC 3164 Syslog • Trapeze private MIB • IETF CAPWAP
IP Multicast	• RFC 1112 IGMP v1 • RFC 2236 IGMP v2
Quality of Service (QoS)	• 802.11e, Wi-Fi Multimedia (WMM) • SpectraLink Voice Priority (SVP) • RFC 2472 DiffServ precedence • RFC 2597 DiffServ Assured Forwarding • RFC 2598 DiffServ Expedited Forwarding

ORDERING INFORMATION

MX-8-xx	• MX with 8 x 10/100Base-T ports (6 PoE), single integrated PSU; supports 12 MPs
MX-8R-xx	• MX with 8 x 10/100Base-T ports (6 PoE), dual integrated PSU; supports 12 MPs
	• xx = NA - North America, EU - Europe, UK - United Kingdom, JP - Japan, AU - Australia

Americas
5753 W. Las Positas Blvd.
Pleasanton, CA 94588
Phone 925.474.2200
Fax 925.251.0642

EMEA
Olympia 3D-2
1213 NS Hilversum
The Netherlands
Phone +31 (0) 35.64.64.420
Fax +31 (0) 35.64.64.429

Asia-Pacific
5 Shenton Way
#37-02/38-02 UIC Building
Singapore 068808
Phone +65.6372.2351
Fax +65.6372.2352

Japan
Ark Mori Bldg., West Wing 12F
12-32, Akasaka 1-chome
Minato-ku, Tokyo 107-6024
Phone +81 (0) 3.4360.8400
Fax +81 (0) 3.4360.8447

DS-MX-8-02/08

www.TrapezeNetworks.com
1.888.768.6625